REMARKS

Claims 4-8, 11-17 and 46-52 have been cancelled.

New claims 53-73 have been added. New independent claim 53 is supported by the specification, at least at page 5, lines 12-16; at page 8, line 14 to page 9, line 2; and at page 9, lines 4-5. New claims 54, 61 and 70 are supported by original claim 7. New claim 55 is supported by the specification, at least a page 8, lines 29-31. New claims 56-57 are supported by original claim 1. New claims 58 and 72 are supported by original claim 4. New claims 59-60, 62, 65, 66, 68, 69 and 71 are supported by the specification, at least at page 7, lines 7-26. New claims 63 and 67 are supported by original claim 5. New claims 64 and 73 are supported by original claim 6.

No new matter has been added.

Interview Summary

Applicants would like to thank Examiner Song for the helpful discussion with Applicants' representative on October 25, 2007. During this discussion, amendments to existing independent claim 46 were reviewed. These amendments are not presented in the present Amendment and Request for Reconsideration.

Request for Reconsideration

Obtaining high-quality protein crystals is typically challenging. No known methods exist to *a priori* predict crystal-producing solution conditions, leaving high throughput screening as the only option. Current crystallization screening platforms have limited capabilities. The equilibrium state reached during a screening experiment does not guarantee the occurrence of a phase transition (formation of a gel, liquid-liquid separation, aggregates, crystals, a film, or combinations thereof; also referred to as a "hit"). In addition, crystals are not typically produced once equilibrium is reached, leaving no definitive end point in the experiment. Typical experiments can take from weeks to months for a phase transition to be observed. Screening methods provide, per experiment, binary

information (hit or no-hit) at best and often have a low success rate (typically < 20%), requiring a large number of experiments to be performed to find a few suitable crystallization conditions.

The claimed invention can overcome limitations of current high throughput screening crystallization platforms. New independent claim 53 is directed to a method of determining crystal growth conditions that includes placing a first plurality of solutions of a compound in a first plurality of housings, and removing solvent from the first plurality of solutions. Each housing of the first plurality includes a top, a bottom, a chamber sealed between the top and the bottom, and a channel connecting the chamber to an external atmosphere. The removing solvent occurs only through the channels to the external atmosphere. In addition, each of the solutions of the first plurality undergoes a phase transition.

Rejection under 35 U.S.C. § 103

The rejection of the claims as obvious under 35 U.S.C. § 103(a) over PCT Publication No. WO 01/88231 A2 to Bray (Bray) in view of Forsythe et al., *Acta Cryst.* (2002) D58, 1601-1605 (Forsythe) has been obviated by appropriate amendment. Independent claim 53 recites a method for determining crystal growth conditions that includes removing solvent from a plurality of solutions, where the removing solvent occurs only through channels to an external atmosphere. In contrast, the references do not teach or suggest removing solvent from a solution through a channel to an external atmosphere.

Bray discloses a method for kinetically controlling vapor diffusion in the crystal growth process (p.4, lines 23-24). The method includes placing a crystal growth solution and a reservoir in vapor contact through a channel (p.5, lines 1-17). The dimensions of the channel and/or the composition of the reservoir can be controlled, and may be changed during the course of the crystallization (p.5, lines 18-19; p.6, lines 3-11, 20-27). For systems in which a crystallization device is coupled with a container containing a reservoir solution, the device and container should be sealed so that the vapor from the crystal growth solution is

forced to diffuse through the device to the reservoir (p.10, lines 25-27; p.11, lines 13-21). There is no teaching of a method or a device that provides for removal of solvent from a crystal growth solution to an external atmosphere.

Forsythe discloses a crystal growth method based on vapor diffusion equilibration in a standard sitting drop system (p.1601, right column, 3rd full paragraph). The reference describes a standard vapor diffusion equilibration process as including placing a protein solution and a reservoir solution in an enclosed chamber, and allowing water vapor to transfer from the protein solution to the reservoir (p.1601, left column, lines 1-7). In the experiments, each crystallization was performed with a precipitant solution in a well and a protein solution on a sitting drop pedestal (p.1601, right column, 5th full paragraph). The precipitant and protein solutions were sealed during the crystallization (p.1603, left column, lines 7-8).

Bray and Forsythe do not teach or suggest removing solvent from solutions, where the removing solvent occurs only through a channel to an external atmosphere. Bray teaches only vapor diffusion between a crystal growth solution and a reservoir, even though the composition of the reservoir and the dimensions of the channel between the crystal growth solution and the reservoir may be changed during the crystallization. Forsythe teaches only a standard sitting drop vapor diffusion equilibration process. Thus, the references do not teach or suggest a method for determining crystal growth conditions that includes removing solvent from a plurality of solutions, where the removing solvent occurs only through channels to an external atmosphere.

Bray and Forsythe, alone or in combination, do not teach or suggest each and every element of the claims. Accordingly, the references cannot make obvious the pending claims. Applicants respectfully request that this rejection be withdrawn.

CONCLUSION

All of the grounds raised in the present Office Action for rejecting the application are believed to be overcome or rendered moot based on the remarks above. Thus, it is respectfully submitted that all of the presently presented claims are in form for allowance, and such action is requested. Should the Examiner feel a discussion would expedite the prosecution of this application, the Examiner is kindly invited to contact the undersigned at (312) 876-1400.

Respectfully submitted,

SOG

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